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ABSTRACT

This document describes the school reform movement at Broadway High School in rural Virginia which has led to great success in mathematics achievement as proven by the Virginia Standards of Learning (SOL) tests. The Onward to Excellence II model provided a way for the faculty to focus on math, especially Algebra I, and to involve the entire school community in the effort to raise student Algebra I scores on statewide tests. (YDS)

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Onward Excellence

Committing to CHANGE With OTE II

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Broadway High School: Moving Ahead in Math

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FOCUSING ON ACADEMIC IMPROVEMENT SCHOOLWIDE CAN BE A DAUNTING CHALLENGE IN A COMPREHENSIVE HIGH SCHOOL. Teachers are spread throughout a large building and are often more aligned to their academic departments and student learning needs within their class or discipline. Teachers understand the value of building skills and knowledge by reinforcing them across the curriculum, but there are relatively few all-school vehicles for accomplishing this. Broadway High School, challenged by its district and the State of Virginia's provisional accreditation rating, turned to OTE II as its comprehensive school reform model to achieve improvement schoolwide.

The OTE II model provided a way for the faculty to focus on math, especially Algebra I, and to involve the entire school community in the effort to raise student Algebra I scores on statewide tests. The efforts have paid off. In 1998, pre-OTE II, less than 14 percent of Broadway's students taking the Algebra I Virginia Standards of Learning (SOL) tests attained a passing score, while in 2001, 90.2 percent of students passed. Such dramatic improvement came from a committed math department, double-blocking math courses, a systematic schoolwide focus, and hard work on the part of Broadway's school community—students, teachers, administrators, parents, and local community members. New ways of working—including a School Leadership Team, and an External Study Team—and ways of

Photo: Student Michael Conard works on geometry in the computer lab.

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collecting and interpreting data are direct OTE II legacies. With these in place, the school is poised to renew commitments and set new goals to raise SOL scores in their second targeted core area—reading.

The School Context

Broadway High School, with a student population of close to 920 students, is the smallest of three comprehensive high schools in the Rockingham County Public Schools district in largely rural Rockingham County, Virginia. The Broadway community (population 2,500) is located about a two-hour drive west of Washington, DC, in the northern Shenandoah Valley. Twelve miles south of Broadway is Harrisonburg, the area's educational hub with James Madison University, and the county's government seat and commercial center.

Broadway High's students are largely Caucasian (96 percent), while 3 percent are Hispanic, and less than 1 percent are Asian or African American. Nearly 15 percent of the students participate in the free or reduced-price lunch program, a higher percentage than the other two district high schools.

There are approximately 90 Broadway staff members, including three full-time administrators. The faculty provides a diverse curriculum to meet the needs of college-bound, technically and vocationally oriented, and alternative-program students. A little more than 30 percent of students receive advanced study diplomas, nearly 60 percent standard diplomas, and 6 percent receive special diplomas or certificates of program completion. The dropout rate for Broadway varied from approximately 4 to 7 percent (1995–2000). The high school is an anchor in the town of Broadway and the surrounding agricultural area. Attendance rates are high (Average Daily Attendance is nearly 95 percent), students participate in clubs and social activities at the school, and local families regularly attend school functions and sporting events.

Broadway High School, Broadway, Virginia.

The high school has recently undergone a change in its leadership and physical facilities. Steve Leaman stepped in as principal in 1999. A year before Leaman arrived, after the school had been in the same building for 46 years, a new high school building was opened—a big step for education in this community. The former high school building was rededicated as the J. Hillyard Middle School (honoring the principal who led Broadway High for 30 years). Ties between this nearby feeder school and the new Broadway High are strong.

The Virginia standards movement is a driving force for Broadway High School. The Virginia Board of Education has mandated that public schools meet the state's Standards of Learning (SOL) and the board measures student achievement through regular testing. The state has also set Standards of Accreditation (SOA) by which school accreditation status is linked to core-subject student achievement relative to benchmarks. There was state and district pressure for Broadway to improve SOL scores quickly.

Broadway's Need *To Improve*

Kim Tate, Broadway High School's OTE II on-site facilitator and testing coordinator, recalls how she and her colleagues felt when they looked at Broadway High's Virginia Standards of Learning (SOL) test results in 1998, the first year the tests were administered. "We were asking ourselves, 'what can we do for our students?' because on the SOLs our students were scoring below state averages consistently and about 10 points below the county averages when compared with the other two high schools in our county.

"We were also in the process of being accredited through the Southern Association of Colleges and Schools (SACS)," Tate remembers. The school received only "provisional" accreditation in 1998–99, largely due to its test scores. "We were at the forefront in our state of having high-stakes testing make a huge difference in the accreditation of our school."

Broadway High's poor student SOL test performance and the school's low accreditation rating came at a time that the school was reeling with big changes already. "We were thrilled to be moving into a new building in December of '98 … and then, we got a new principal and two new assistant principals … even into the fall of '99 we were struggling," says Tate. "We were asking teachers to do a lot of things."

We were at the forefront in our state of having high-stakes testing make a huge difference in the accreditation of our school.

Beyond the challenges of change and the accreditation issue, there was a true concern for the students. Tate says, "Virginia is moving toward SOL end-of-year tests as the basis for student graduation … when push comes to shove, those students have to graduate from high school. We can't feel good about ourselves and our students can't feel good about themselves if they're not ready for those tests and they can't graduate." Rockingham County Schools and Broadway High needed to do something about this situation.

Kim Tate, English teacher/testing coordinator/OTE II site facilitator.

Implementing Change

OTE II was one of a number of key efforts initiated at Broadway High School in the late 1990s. Under the direction of Rockingham County Public Schools, a critical step was an application that the Broadway staff submitted in the fall of 1998 for a Comprehensive School Reform Demonstration (CSRD) grant. Broadway received one of four high school CSRD awards statewide during that grant round. The grant provided the school with financial support ($150,000 over three years) and the mandate to select a reform model that would be a vehicle for improvement.

The school's accreditation steering committee, which included faculty, reviewed a number of state-approved models. Tate says Broadway chose OTE II because "it matched some of the work we had done

with the Southern Association of Colleges and Schools accreditation process in data gathering." She feels OTE II provided an important additional ingredient: support. The OTE II process is guided by school-experienced OTE II trainers who help lead schools through the two-year process. In addition, OTE II establishes an organizational structure that includes a paid staff Site Facilitator; a School Leadership Team including school administrators, staff, and community stakeholders; and an External Study Team that draws on local expertise that can assist the school. Tate remarks, "SACS provides no real ongoing support for change .... It's a total school responsibility to determine the change. It's not realistic to expect teachers to do that by themselves for the most part, in addition to everything else that teachers are asked to do in the course of a day."

One key feature of the OTE II process for Broadway High School was Rockingham County Public Schools' decision to provide the financial support needed to include Broadway's feeder, J. Hillyard Middle School, in the OTE II process from the beginning. Recognizing that lower-test-score trends begin in grades prior to high school, the district wanted the two schools to articulate a 6–12 improvement effort together. Thus, Ken Servas, the OTE II trainer assigned to Broadway from the Northwest Regional Educational Laboratory, began working with staff from both schools during the spring of 1999.

Early OTE II activities included Overview and Awareness sessions for full faculty and district staff, and a Getting Started workshop that provided an in-depth introduction to the process for key players. Hiring part-time site facilitators to lead and coordinate OTE II activities at both schools was the next step during this early phase and critical to the process.

The School Leadership Team (SLT) and External Study Team (EST) were also brought together at Broadway during this early phase. According to OTE II design, the SLT at Broadway includes key administrators, faculty, district staff, and parent and community representatives. This group received training about the OTE II process and consensus-based decisionmaking so the Team could facilitate Broadway's change process. The school was asked to gather its External Study Team together. Faculty from the Education Department of nearby James Madison University and district staff joined the group and collaborated with the School Leadership Team to prepare a school profile. The two groups worked together to connect the OTE II process to the profiled data and to the CSRD and accreditation activities that were already part of the Broadway context. Les Bolt, a member of Broadway's External Study Team commented on his role and how he viewed the OTE II process, "My role was to deal with data, trying to communicate the data ... the school needed that. [The school also] needed a process .... OTE II is structured for the people at the school to know what to do next ... that process is as important as the final product because that's where the learning takes place [for the staff]."

Deciding on the focus for schoolwide improvement is a key element of OTE II and this was Broadway's next step. With trainer guidance, the School Leadership Team at Broadway used its school profile to inform and assist in the goal-setting activities conducted with Broadway staff and community members. The outcome was two final goal statements. In brief, the school set two goals: to improve students' skills performance in both Algebra I and reading. Both short-term (one-year) and long-term (three-year) improvement targets were set. In Algebra I, the school set a short-term target to increase student SOL performance by 7–10 percent by spring 2001, while in reading the school wished to meet or exceed 70 percent passing (up from 36.7 percent in 1999) by spring 2001.

Carolyn Cook, math teacher/department chair, School Leadership Team member.

Once Broadway High School set its goals, school community members worked earnestly to accomplish them. Staff members needed to examine what they were actually teaching in the core areas and to understand what instructional practices affected student learning most. Several OTE II workshops and activities helped the faculty understand research-based best practices. With encouragement from trainer Ken Servas, Broadway focused first on its math improvement goal. An Alignment and Curriculum Mapping workshop called for faculty to consider how the "taught" curriculum meshed with learning outcomes desired for the SOLs and to modify curriculum schoolwide to try to attain key learning outcomes. As EST member Les Bolt notes, "This process opened up communication across the entire school, across the entire community .... Typically, high schools are pretty isolated environments for teachers .... their successes and failures become internalized and don't get shared."

There were focus groups of teachers and students and a daylong schoolwide observation called Data in a Day, and there were faculty study groups. Letitia Morris, a veteran business teacher and member of the SLT remarks about the focus groups, "we could talk about how other departments could help with math .... It wasn't just the math department's problem. We could all help in some way." Assistant Principal Wenger found the student perspectives valuable during post-observation debriefings after the OTE II Data in a Day event. The students had been reacting to the teachers' stress in the classroom about the SOLs and, once they understood the broader SOL implications for the school, the students also wanted to get to work. Wenger reported, "They were saying, 'We know what's going on now, so let's not focus 100 percent of the time on SOLs. Let's do our work' .... we were able to listen to how the pressure was affecting the students."

In the study groups, the faculty researched best practices in math and other areas and brought them back to the Leadership Team with recommendations for interventions most likely to bring learning results. Reading teacher Tim Reger explains, "best practices information that we received kind of hit home for a lot of teachers. Teachers said, 'Some of what we're doing is fine, but we have to take it to a higher level.'" Interventions recommended by faculty included:

- Reviewing and reteaching (rationale: allocating time for review and reteaching is effective if different examples, materials, and methods are used)
- Instructional strategies with clear information and structure, designed so students engage in a variety of activities—talking, designing, creating, problem solving (rationale: variety of activities improves level of understanding, comprehension, retention, and test scores)
- Communicate motivational goals by posting math symbols, schoolwide math goal, and BHS mission statement (rationale: motivated students/teachers more likely to meet goals)
- Cultivate student responsibility to bring materials to class, meet deadlines, complete assignments, and engage positively (rationale: students will see importance of character to learning)

OTE II workshops and activities helped the faculty understand research-based best practices.

Reading teacher Tim Reger with students.

- Caring—emphasize students first in order to improve atmosphere to retain content (rationale: reinforce that student needs take priority over test scores)
- Respect—to be tolerant, accepting, and fair; gracious in thoughts, understanding, and actions to all people; and to protect and safeguard property (rationale: atmosphere of respect has a positive impact on the ability of students to learn)

Out of these experiences, during spring 2000 the School Leadership Team with Kim Tate's coordination developed an Implementation Plan aimed at taking steps to reach the OTE II goals. The Leadership Team took a draft three-year plan to the staff and broader school community for input. The plan stated the specific interventions and supporting rationales faculty members had generated, then charted steps, resources needed, and target dates. After incorporating feedback, the SLT refined its plan, then moved with the school administration's endorsement into full implementation mode.

During the 2000–2001 school year, Broadway High and Hillyard Middle schools' staff development emphasized training that supported the plan and the changes in instruction desired throughout the schools. With new tools and methods in hand, Broadway faculty took math on as a high priority and integrated math content or skill-building that supported math across the disciplines. The ways Broadway High School focused on and reinforced math were sometimes basic, but also ingenious and varied. This short list shows some of the numerous ways the school directed its attention toward math improvement:

- Schedule changes to accommodate double-blocking so students could receive reinforcing math instruction in computer labs
- Re-Start program initiated for students with C average or below in math
- Math department began work to standardize exams across faculty who teach the same courses
- Motivational math poster created by desktop publishing students was hung in classrooms throughout the school
- Plot-graphing as an activity in reading classes
- Student discussions about "hypothesis" in math classes and in other disciplines where the term is understood differently

Results for *Broadway* Students

When the results for the SOL tests came back for the years following 1998, results were gratifying. (See Figures 1 and 2.) By 2000, Algebra I passing results had doubled from the dismal 13.6 percent passing in 1998 to more than 38 percent passing. Payoff for the school's focused efforts really came in 2001 when more than 90 percent of Broadway's students passed the Algebra I SOL test—the highest algebra scores of all three high schools in the district. For reading, the second OTE II schoolwide improvement area, scores are going up, too. A seven-point gain has been realized in the school's reading scores between the 63 percent passing score in 1998 as compared to more than 70 percent passing in 2001.

Maintaining Momentum

The OTE II process has been a contributing factor to a number of lasting improvements at Broadway High School. Certainly, the school's staff and students have reason to celebrate that their hard work in the classroom has brought better test results. But, the school has built other strengths, too. Faculty buy-in exists to a greater extent across the school to make schoolwide improvement efforts and there are mechanisms in place to do that work. Staff members are feeling more supported and are willing to take risks. Support from their colleagues and the school administration has sparked more faculty interest in professional development in research-based instructional methods, and more teachers are talking about how successful practices from their classroom experiences could work for others.

Carolyn Cook, 27-year veteran teacher and head of the Broadway High School math department aptly summarized the standards-test-driven situation at

Figure 1: Broadway High School, Virginia Standards of Learning (SOL) Assessments, 1998–2001

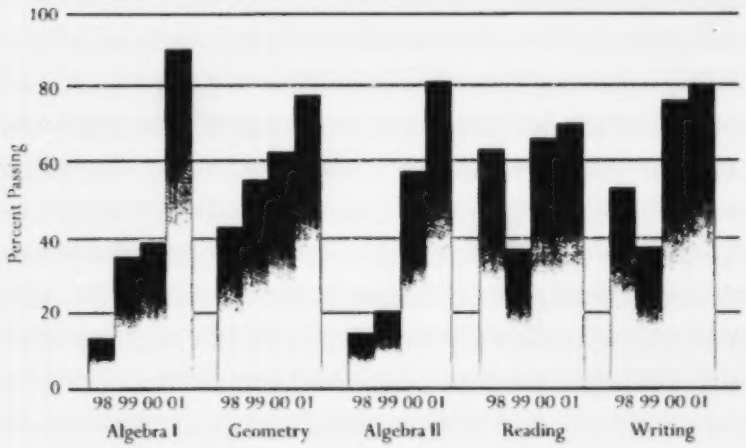
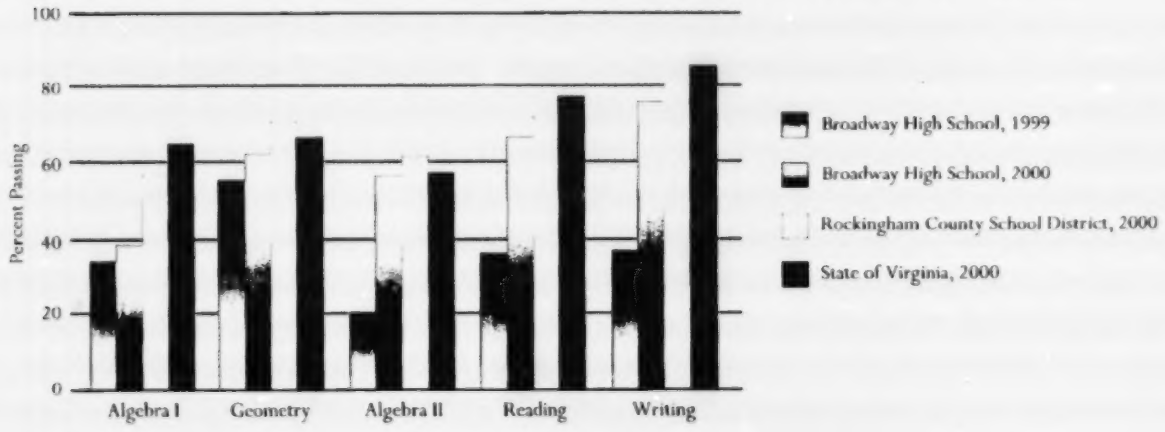


Figure 2: Broadway High School, Virginia Standards of Learning (SOL) Assessments, 1999 and 2000, Compared to SOLs for Rockingham County School District and State of Virginia, 2000



Broadway and OTE II's role: "The fact now is that Standards of Learning are driving our curriculum .... I didn't understand how this process was going to work for a while. It took me a bit to learn that when the ideas come from within—that what we, the math department, wanted to work on was within the framework of OTE II--then we could find the resources to make our ideas work faster."

Broadway High School, at the point of renewal and refocusing on new improvement goals, has organizational elements in place that were introduced through the OTE II process, but that are now a part of the school's way of doing business. The school sees value in the External Study Team and will maintain it. The EST has brought Broadway the ability to use data effectively for planning, rather than just to collect it. And, its membership includes district-level staff who can be advocates for the school in the district office. Veteran and new teachers are interested in joining the School Leadership Team as membership turns over because they can voice suggestions and concerns, be heard, and work toward action.

Onward to Excellence II (OTE II) is a process for school improvement developed by the Northwest Regional Educational Laboratory. To help schools succeed, OTE II builds school capacity for long-term systemwide change and continuous school improvement while improving student achievement. OTE II training is provided by regional centers across the country. Consult our Web site for more information.

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